SENNIGER, POWERS, LEAVITT & ROEDEL
ATTORNEYS AT LAW

FRANK R. AGOVINO
DERICK E. ALLEN
ROBERT M. BAIN
G. HARLEY BLOSSER
RICHARD L. BRIDGE
JAMES E. BUTLER, PH.D
SARAH J. CHICKOS
J. BENNETT CLARK
CHARLES E. COHEN, PH.D
DAVID E. CRAWFORD, JR.
MATTHEW L. CUTLER
PATRICK S. EAGLEMAN
ROBERT M. EVANS, JR.
PAUL I.J. FLEISCHUT
MICHAEL E. GODAR
CHRISTOPHER M. GOFF
DAVID M. GRYTE
EDWARD J. HEJLEK
KAREN Y. HUI
KURT F. JAMES
VINCENT M. KEIL
ANTHONY R. KINNEY
WILLIAM E. LAHEY
DONALD G. LEAVITT
PAUL A. MADDOCK
MICHAEL G. MUNSELL
DEBRA D. NYE
KATHLEEN M. PETRILLO
LAURA R. POLCYN
STEVEN M. RITCHEY
JOHN K. ROEDEL, JR.
JOSEPH A. SCHAPER
MEG MARSHALL THOMAS
DONALD W. TUEGEL
SCOTT A. WILLIAMS

ONE METROPOLITAN SQUARE
16TH FLOOR
ST. LOUIS, MISSOURI 63102
314-231-5400

FACSIMILE 314-231-4342
http://www.senniger.com

PATENTS, TRADEMARKS, COPYRIGHTS
AND RELATED MATTERS

OF COUNSEL
IRVING POWERS
RICHARD G. HEYWOOD
ROBERT J. LEWIS

STUART N. SENNIGER
(1921-1997)

September 20, 1999

UTILITY PATENT APPLICATION TRANSMITTAL
(new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket Number: MRZ 8980
First Named Inventor: David C. Carrithers et al.
Express Mail Label Number: EL302953100US

TO: Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

APPLICATION ELEMENTS

1. [X] Fee Transmittal Form
(original and duplicate)

2. [X] Specification [Total Pages 41]

3. [X] Drawings [Total Sheets 7]

4. Oath or Declaration [Total Pages 5]

a. [ ] Newly executed (original or copy)
[ ] New (unexecuted)

b. [X] Copy from a prior application
(for continuation/divisional with
Box 17 completed)
i. [ ] DELETION OF INVENTOR(s)
Signed statement attached
deleting inventor(s) named
in prior application.

5. [X] Incorporation By Reference
(useable if Box 4b is marked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. [ ] Microfiche Computer Program (Appendix)

7. [ ] Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
   a. [ ] Computer Readable Copy
   b. [ ] Paper Copy (identical to computer copy)
   c. [ ] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. [ ] Assignment Papers (cover sheet & document(s))

9. [ ] 37 CFR 3.73(b) Statement [ ] Power of Attorney

10. [ ] English Translation Document (if applicable)

11. [ ] IDS with PTO-1449 [ ] Copies of IDS Citations

12. [ ] Preliminary Amendment

13. [X] Return Receipt Postcard

14. [ ] Small Entity Statement(s)
    [ ] Statement filed in prior application; status still proper and desired

15. [ ] Certified Copy of Priority Document(s) if foreign priority is claimed

16. [ ] Other: _____

IF A CONTINUING APPLICATION, CHECK APPROPRIATE BOX AND SUPPLY THE REQUISITE INFORMATION

17. [X] Continuation [ ] Divisional [ ] Continuation-in-Part of prior application No.: 08/969,093, filed November 12, 1997, which is a continuation of 08/620,041, filed March 21, 1996, which is a continuation-in-part of 08/408,690, filed March 21, 1995.

    [ ] Complete Application based on provisional Application No. ___/_____

CORRESPONDENCE ADDRESS

18. Correspondence Address: Customer Number 000321
    Attention: Frank R. Agovino

Respectfully submitted,

Frank R Agovino

Frank R. Agovino, Reg. No. 27,416

FRAcwa

DEBIT CARD SYSTEM AND METHOD FOR IMPLEMENTING INCENTIVE AWARD PROGRAM

Notice

Background of the Invention

1. Field of the Invention.

The invention relates to a computer and data processing system for implementing an incentive award program and, in particular, a system which employs debit cards allowing participants to purchase rewards by electronic debit transactions.

2. Description of the Prior Art.

Motivational programs are well-known in the prior art. In general, such programs have been administered by incentive companies which have contracted with a sponsoring company for providing a motivational or incentive program to promote the sales of the sponsoring company's products or services or to improve the performance of the sponsoring company's personnel. Based on various criteria, such as a participant's performance, the participant accumulates points

over a period of time. Computer programming and data processing have been used to report to the participants the number of points that have been achieved at certain periods of time during the program. When the participant decides to take advantage of the awarded points, the participant is generally provided with a voucher or other paper documents which entitles the participant to obtain products or services.

Although such systems are highly effective, they can be expensive to administer and the paperwork involved in maintaining such systems can be extensive. There is a need for an incentive award program system which minimizes the paperwork needed to administer the system and, in particular, minimizes or eliminates the paperwork needed to support a transaction by which a participant obtains rewards.

Summary of the Invention

It is an object of this invention to provide a system for implementing an incentive award program which employs debit cards. It is another object of this invention to provide a system which implements an incentive award program which minimizes or eliminates the need for paperwork to support transactions by which participants obtain rewards, and track such said earnings, redemption and accounts. It is another object of this invention to provide a system for implementing an incentive award program which employs debit cards bearing identification of the customer or sponsor of the incentive award program. It is another object of this

invention to provide a system for implementing an incentive award program which uses debit cards rather than credit cards, but allows debit transactions at the time of sale to be transparent to merchants and so that merchants can process debit transactions using debit cards of the invention in a similar manner to the processing of credit card transactions. All merchants who accept cards for payment (including credit and debit) are part of the/a card transaction settlement system including: issuing banks, card associations, acquiring institutions, transaction processing, etc.

The invention comprises a system for implementing an incentive award program for a sponsor customer having participants. The program permits the participants to obtain as a award products and/or services from authorized merchants who are part of the incentive award program and who are part of a credit/debit card network. The credit/debit card network also includes unauthorized merchants who are not part of the incentive award program but who are part of a credit/debit card network. Each merchant has access via an input/output (I/O) port to a credit/debit card network processor of transactions. The system comprises a plurality of debit cards, a filter processor and software, responsive to a debit transaction initiated by a merchant using an initiating card having an initiating account number, for transmitting debit transaction data from the credit/debit card network processor to the filter processor. Each debit card is assigned to one participant and has a unique account number corresponding to an award account of the participant.

The filter processor accesses the following program data: data identifying the authorized unique account numbers of the participants, data identifying the authorized merchants accepting such said debit card, and data indicating the balance in each participant's award account. The filter processor interfaces with the credit/debit card network processor. The credit/debit card network processor has software responsive to a transaction initiated by a merchant using an initiating card having an initiating account number, for transmitting to the filter processor the following debit transaction data: the initiating account number of the card initiating the debit transaction, merchant identification data of the initiating merchant, and data regarding the amount of the initiated debit transaction. The filter processor includes software for evaluating the debit transaction data transmitted to the filter processor by the credit/debit card network processor by comparing the debit transaction data to the program data. The filter processor evaluating software includes software for generating validating data for the debit transaction when the evaluated debit transaction data indicates that the debit transaction has been initiated by an authorized merchant using the unique account number of a participant having a sufficient balance in the participant's corresponding award account to cover the debit transaction. The filter processor evaluating software includes software for generating invalidating data for the debit transaction when the evaluated debit transaction data indicates that the initiating account number is not one of

the authorized account numbers. The filter processor evaluating software includes software for generating invalidating data for the debit transaction when the evaluated debit transaction data indicates that the initiating merchant is not one of the authorized merchants. The filter processor evaluating software includes software for generating invalidating data for the debit transaction when the evaluated debit transaction data indicates that the balance in the award account corresponding to the initiating account number is insufficient to cover the amount of the initiated debit transaction. The filter processor includes software for transmitting the validating or invalidating data to the credit/debit card network processor. The credit/debit card network processor provides the validating or invalidating data for the evaluated debit transaction to the initiating merchant.

Other objects and features will be in part apparent and in part pointed out hereinafter.

Brief Description of the Drawings

Figure 1 is a block diagram of a system according to the invention illustrating the hardware components and their interconnection.

Figures 2 and 3 are flow charts illustrating the decision steps of the invention as implemented by the various hardware components shown in Figure 1 during a pre-authorization debit transaction.

Figures 4A and 4B are flow charts illustrating the decision steps of the invention as implemented by the various hardware components shown in Figure 1 during a force post debit transaction.

Figures 5A and 5B are flow charts illustrating the decision steps of the invention as implemented by the various hardware components shown in Figure 1 during a settlement/commissions debit transaction.

Figure 6 is a flow chart illustrating the flow of data within a system according to the invention.

Corresponding reference characters indicate corresponding parts throughout the drawings.

Detailed Description of the Preferred Embodiments

One preferred embodiment of hardware of a debit card system 100 according to the invention is illustrated in block diagram form in Figure 1. Debit card system 100 implements an incentive award program managed by an administrator for a customer having participants who are part of the incentive award program. As used herein, an incentive award program may be any incentive plan or policy used to encourage or reward the participant, the participant's performance, the participant's use of particular merchants which sell goods and/or services, or a combination of these. Frequently, such programs are referred to as loyalty, frequency, affinity, retention, or performance improvement programs. This is because such programs encourage or improve participant loyalty, affinity, retention, quality of performance or

frequency of performance. The program permits the participants to obtain as a motivational award products and/or services from authorized merchants who are part of the incentive award program. As part of the incentive award program, authorized merchants have a contractual and/or business relationship with the administrator and have agreed to participate in the incentive award program and the handling of debit transactions and commissions as described in more detail below.

The debit card system 100 of the invention may be preferably implemented as part of a pre-existing credit/debit card network 102 in which the authorized merchants participate. Such credit/debit card networks tend to be worldwide and rather extensive so that it is contemplated that such networks may also include unauthorized merchants who are not part of and who are not participating in the incentive award program but who are a part of and who are participating in the credit/debit card network.

In general, credit card network 102 implements the debit card system 100 and includes a credit/debit card network processor 104 having a plurality of input/output (I/O) ports 106 which would form the credit card network by interconnecting merchants 108, 110 and 112, such as by phone lines. As illustrated in Figure 1, merchant 108 is an authorized merchant having a card reader which accesses the credit card network processor 104 via I/O port 106A. Merchant 110 is also an authorized merchant having access to the credit card network processor 104 via I/O port 106B by call-in access. In other words, merchant 110 places a call

to a third party having access to the credit/debit card network processor 104 via I/O port 106B by computer or some other known technique. Merchant 112 is illustrated as an unauthorized merchant meaning merchant 112 is not a part of the incentive award program. As illustrated, merchant 112 has access to credit card network processor 104 via I/O port 106C by a card reader at point of sale. It is also contemplated that other authorized and unauthorized merchants are a part of the credit/debit card network 102. For simplicity, only three merchants are illustrated. For example, other authorized merchants may also be a part of the network 102 and access processor 104 via a call-in access rather than a card reader access.

The debit card system 100 includes a plurality of debit cards 114. Each debit card 114 is considered unique and is assigned to one participant of the incentive award program. Each debit card 114 has a unique account number which is generally printed on the card such as by raised lettering and may also be encoded on a magnetic strip which is part of the debit card. This unique account number corresponds to an award account of the participant. The award account is the vehicle by which the customer rewards its participants with points which allow the participants to take advantage of the incentive award debit card system 100.

In general, debit cards are very different and distinguishable from credit cards. Credit cards are a type of credit instrument such as credit accounts which allow users to buy products and/or services by drawing against

their established credit line and repaying the bank or other institution which advances the credit, and if an individual having a credit card is unable to repay the full amount utilized at time of account settlement they are able to pay back the owed amount to the issuing credit card institution but a percent of interest is charged (a fee) on the amount owed. In contrast, debit cards are a type of debit instrument similar to checking accounts or other account systems which allow users to conveniently spend pre-existing cash assets which are deposited in advance by the user in the debit accounts. Any time a user would like to spend some of the deposited cash, a debit instrument such as a debit card is used to transfer a portion of the deposited cash assets to a particular merchant in exchange for products and/or services obtained by the user. A debit card offers the services of an account from which funds or points can be withdrawn without the need for paper to effectuate the debit transaction. It is an electronic account that transfers amounts from one account to another as a holder of the card uses the card to make purchases. Once a card holder or participant uses their debit card for a purchase, the purchase amount is withdrawn from their account to pay for or cover the services or products being purchased.

Another aspect of the debit card system 100 of the invention is a filter processor 116 which would preferably be supplied by and controlled by a bank or other financial institution. The filter processor 116 interfaces with the credit card network processor 104 via an I/O port 118 such as

a phone line or radio frequency link. For example, the credit/debit card network 102 may be any well-known commercial network such as the Mastercard credit card network or the Visa Card credit card network and filter processor 116 may be any of a plurality of financial institutions affiliated with and linked to such networks for administering credit/debit cards issued by the financial institution. Normally, filter processor 116 would be provided with data identifying the authorized unique credit/debit card account numbers of credit/debit cards issued by the financial institution. According to the debit card system 100 of the invention, filter processor 116 also accesses program data including data identifying the authorized unique account numbers of the participants of the incentive award program. Each unique account number has been assigned to one particular participant and that participant's debit card or cards bears the assigned unique account number, which account number corresponds to the award account of the participant. In addition, the filter processor accesses program data including data identifying the authorized merchants 108 and 110. This merchant identification data which is part of the program data forms a significant aspect of the debit card system 100 of the invention. This merchant identification data is not normally needed to process credit card transactions because for each credit card transaction, it is assumed that all merchants that access the credit/debit card network 102 are part of the credit card system. In contrast, all merchants may not be part of the debit card system 100 of

the invention. If there are more authorized merchants than unauthorized merchants, such merchant identification data may take the form of a list of unauthorized merchants.

In addition, the filter processor 116 accesses program data including data indicating the balance of each participant's award account. This balance is controlled and maintained by the customer and would have a point value which is converted into a currency value in the course of a debit transaction, as will be explained in greater detail below.

As illustrated in Figure 1, the program data may be accessible to the filter processor 116 via an I/O port 120 which interconnects the filter processor 116 to a host processor 122 of the administrator. As a result of this interconnection, the program data may be provided to the filter processor 116 on a real time and/or batch basis. Optionally, it is also contemplated that an intermediary processor 124 of the administrator may be located between terminals 126 for implementing the system of the invention and the host processor 122. The intermediary processor 124 would allow the administrator to generate reports and otherwise manipulate the program data independent of the host processor 122 and independent of the I/O port 120 which interconnects the host processor 122 to the filter processor 116. Although the administrator, bank, and customer are indicated as separate entities, it is contemplated that the bank and administration may be the same entity, in which case processors 116, 122, and 124 may be a single processor

computer. Alternatively, the customer may be both the administrator and/or the bank.

A debit transaction is initiated by a merchant using an initiating card having an initiating account number. The initiating card may be one of the debit cards 114 of the debit card system 100 or may be some other type of card, such as a credit card, which is not a part of the debit card system 100 but which may be used with the credit card network processor 104 to access a card user's credit. In general, credit cards and debit cards may have the same physical appearance, structure, and follow the same steps at point of purchase. Therefore, an initiating merchant may choose not to determine whether the initiating card is one of the debit cards 114 of the system or some other card. Therefore, the debit transaction is transparent to the initiating merchants to the extent that the initiating merchant does not have to distinguish between debit transactions using the debit card and transactions using a credit card and can process both debit card transactions and credit card transactions in the same manner.

Upon initiating the debit transaction, debit transaction data is provided to the credit/debit card network processor 104 via one of the I/O ports 106. For example, authorized merchant 108 may initiate a debit transaction by using its card reader to read the initiating card and provide card identification information via I/O port 106A. Simultaneously therewith, merchant identification is also provided to the credit card network processor 104. In addition, the

initiating merchant also provides data indicating the amount of the initiating debit transaction.

In response to a debit transaction initiated by a merchant using the initiating card having the initiating account number, debit transaction data is transmitted from the credit card network processor to the filter processor. Preferably, this transmission process is accomplished by a means such as software executed by the credit/debit card processor which provides the debit transaction data via I/O port 118.

In summary, the filter processor 116 is provided with program data from the host processor 122 via I/O port 120 and is also provided with debit transaction data from the credit/debit card network processor 104 via I/O port 118. Preferably, the filter processor 116 includes means, such as software executed by the filter processor for evaluating the debit transaction data transmitted to the filter processor 116 by the credit/debit card network processor 118 by comparing the debit transaction data to the program data. This filter processor evaluating means or software, such as illustrated in Figures 2-5 and described in detail below, includes means or software for generating validating data for the debit transaction when the evaluated debit transaction data indicates that the debit transaction has been initiated by an authorized merchant 108, 110 using the unique account number of one of the participants having a sufficient balance in the participant's corresponding award account to cover the debit transaction. The validating data may be in the form of

a signal provided to the merchant indicating that the debit transaction has been "APPROVED." The filter processor evaluating means or software generates invalidating data in response to the initiated debit transaction when the evaluated debit transaction data indicates that the initiating account number is not one of the authorized account numbers. The validating data may be in the form of a signal provided to the merchant indicating that the debit transaction has been "DISAPPROVED." For example, the initiating account number may be a credit card account number. Credit card account numbers are not part of the participant account numbers defined by the program data which is stored in host processor 122 and provided via I/O port 120 to filter processor 116. Initiating a transaction using such a credit card account number would result in invalidating data being generated.

The filter processor evaluating software also includes means or software for generating invalidating data for the debit transaction when the evaluated debit transaction data indicates that the initiating merchant is not one of the authorized merchants. For example, if unauthorized merchant 112 initiated a debit transaction, merchant 112 would not have an identification number which is part of the list of authorized merchants of the program data. Therefore, invalidating data for the debit transaction would be generated.

The filter processor evaluating means or software also includes means or software for generating invalidating data

for the debit transaction when the evaluated debit transaction data indicates that the balance in the award account corresponding to the initiating account number is insufficient to cover the amount of the initiated debit transaction. For example, assume a debit card 114 of the debit card system 100 is used to initiate the debit transaction and that such initiating card has a participating account number which has been provided to the filter processor 116 by the host processor. Along with the account number, host processor 112 would provide the participant award account balance in points. The filter processor 116 would convert these points to a dollar value as shown in Figure 3. If the converted dollar value does not equal or exceed the dollar value of the initiating debit transaction, invalidating data is provided to the credit card network processor 104 via I/O port 118. It is contemplated that the filter processor may convert the points into any currency denomination which corresponds to the currency denomination of the initiated debit transaction.

The filter processor also includes means or software for transmitting the validating or invalidating data to the credit card network processor 104 via I/O port 118 so that the credit card network processor provides the validating or invalidating data for the evaluated debit transaction to the initiating merchant via I/O port 106.

In general, a complete debit transaction according to the invention has three parts which preferably occur in the following order: a pre-authorization process including the

conversion of points to a currency, such as illustrated in Figures 2A, 2B, and 3; a force post process such as illustrated in Figures 4A and 4B; and a settlements/ commissions process such as illustrated in Figures 5A and 5B.

Referring to Figures 2 and 3 which describe the pre-authorization process, the process begins with a merchant 108, 110 or 112 initiating a debit transaction at step 202. In particular, the merchant submits the authorization debit transaction including the debit transaction data to the credit/debit card network 102 at step 204. Upon contacting the network 102 via one of the I/O ports 106, the processor 104 is able to determine the identity of the initiating merchant and forwards the merchant's identification data with the authorization debit transaction data at step 206. In addition, step 206 forwards a merchant identification number with the debit transaction as a fraud prevention and verification measure. The identification number may be any number or code, such as a number assigned by processor 130, which uniquely identifies each merchant. For example, in the MasterCard system, the ICA (Interbank Card Association) number may be used as the identification number.)

In addition, the identification number may include specific and local merchant location information to further identify each location. This location information may be a number or code which distinguishes each location. Such location information would be particularly useful in cases where a single merchant may have multiple locations and not all locations are authorized merchants which have the

authority to access the debit card system 100 of the invention. For example, a hotel may have a registration desk location, a gift shop location and a restaurant location and only the gift shop location may be authorized to access the debit card system 100. In this case, the merchant identification information would include location information and the filter processor 116 would be programmed to distinguish between authorized and unauthorized locations as well as being programmed to distinguish between authorized and unauthorized merchants. In some existing credit card systems, the merchant identification number (such as the ICA number) and/or a merchant location number have not been uniquely assigned or utilized in broad terms. In such systems, such numbers would have to be modified to be standardized and unique so that such numbers may be used as part of the debit card system 100 and so that such numbers may be filtered by filter processor 116.

Next, the processor 104 transmits the authorization debit transaction data including the ICA and merchant numbers to the filter processor 116 of the bank via I/O port 118 by step 208. The filter processor 116 receives the authorization debit transaction data at step 210 and begins its analysis thereof.

At step 212, filter processor 116 evaluates a prefix of the initiating card identification number to determine whether the initiating card is a debit card. In general, it is contemplated that debit card account numbers would have a different prefix than credit card and other card account

numbers. If the initiating card is not a debit card as defined by its prefix, the process proceeds to step 214 to generate invalidating data because the process is employing a non-debit card. If step 212 determines that the initiating card is a debit card, the process proceeds to step 216 to confirm that the initiating merchant is one of the authorized merchants defined by the program data, i.e., ICA/merchant data is part of program data. If the merchant is not an authorized merchant, the process proceeds to step 218 to indicate invalidating data because the initiating merchant is not a merchant taking part in the incentive award program and, therefore, does not have the right to use the debit card. If the initiating merchant is an authorized merchant, the process proceeds to step 220 to determine whether or not the initiating debit card has a valid debit card account number as defined by the program data. If the initiating card does not, the process proceeds to step 222 to generate invalidating data because that the debit card account number is not part of the program data.

If the initiating debit card is a valid debit card number, the process proceeds to step 224 to evaluate the DDA (demand deposit account) portion of the initiating account number. If the DDA portion is invalid, the process proceeds to step 226 to generate invalidating data because of an invalid DDA account number. If the DDA account is valid, the process proceeds to step 228 to determine the number of points available for the particular account number. If the number of points when converted to a currency does not equal

or exceed the value of the initiating debit transaction, the process proceeds to step 230 to generate invalidating data because of insufficient points to complete the debit transaction.

The process continues with Figure 3. If sufficient points are available to cover the debit transaction, the process proceeds to step 236 to debit the account balance. After step 236, the process proceeds to step 238 to generate validating data provided by the filter processor 116 via I/O port 118 to the processor 104 and eventually to the initiating merchant.

Although the system of the present invention is intended to prevent participants from exceeding the amount of points in their award account, if the authentication procedure is not fully utilized as described above, such as due to the permitted use of the equivalent of what are generally known as "floor limits;" i.e., amounts below which the merchant does not have to first seek authorization before approving the transaction, it is possible that an occasional "overdrawn condition" can occur on a temporary basis. If this occurs, the financial institution or the incentive award company can and should demand immediate clearance of the overdraft condition, such as by an equivalent cash payment or the addition of additional award points to the account. In this regard, this inadvertent overdrawn or overdraft condition is similar to that described in United States Patent Nos. 4,346,442 and 4,597,046 in which the customer or participant

is notified of the overdraft condition and required to clear the overdraft.

Figures 4A and 4B illustrate the force post process which generally occurs 24/48 hours after the completion of the pre-authorization process of Figure 2 which resulted in the generation of validating data and a completed debit transaction. Referring to Figure 4A, the merchant completes the debit transaction at step 402 and more particularly at step 404 by submitting a debit card force post debit transaction to processor/acquirer 130 (see Fig. 1). Next, the merchant's processor/acquirer submits the force post debit transaction through the credit card network 102 generally by access via a separate I/O port such as I/O port 106D (Fig. 1). At step 408, the credit/debit card network processor 104 forwards the ICA and merchant data with force post debit transaction.

At step 410, the credit/debit card network 102 sends the force post debit transaction data including the ICA and merchant number to the filter processor 116 of the bank. Thereafter, steps 412, 414, 420, 422, 424, and 425 parallel and essentially duplicate steps 212, 214, 220, 222, 224, and 226 of Figure 2A. Assuming that the force post debit transaction is a debit card having a valid card number and a valid DDA account, the

process proceeds to step 426 which permanently adjusts the participant's point balance account and to step 427 which converts the force post point value to dollars. The process then proceeds to step 428 to confirm that sufficient funds (converted from points) are available in the administrator's account to cover the debit transaction. If not, the process proceeds to step 430 to invalidate the debit transaction for insufficient funds. Otherwise, the process proceeds to step 432 to determine whether the debit transaction is a credit (refund) or debit. If it is a credit, step 434 is executed to credit the administrator's dollar account balance. Otherwise, steps 436 and 438 are executed to debit the administrator's dollar account balance against the participating award account balance and complete the processing of the force post debit transaction.

After the force post debit transaction, possibly a week to two weeks, the third and final portion of the debit transaction is executed by the posting of settlements/commissions. Referring to Figure 5A, the settlements/commissions process begins with the administrator receiving a redemption file from the bank at step 502 indicating the details of completed force post debit transactions. These completed debit transactions now become settlement transactions which are processed at step 504 by loading the redemption file into the administrator's processor 122 or 124. The supplier's profile is looked up at step 506. If no profile is found at step 508, the settlement transaction is processed as an exception to the redemption file at step 510. Otherwise, the process proceeds with step 512 in which the administrator's processor looks up the commission percentage from the supplier's profile.

Continuing with Figure 5B, the administrator's processor calculates the commission due to the administrator at step 514, looks up the billing method from the supplier profile at step 516, creates a settlement/commission detail report at step 518, and determines the type of billing method at step 520. If the billing method is not a manual billing method, the process proceeds to step 522 to execute a process automated clearing house (ACH) billing method. Otherwise, the process proceeds to step 524 to create a manual invoice, then to step 526 to attach an invoice to the settlement/ commission report and finally to step 528, which also proceeds after step 522, to mail the settlement commission report to the supplier/merchant.

Figure 6 illustrates the data flow between the administrator's processors 122, 124, the filter processor 116 of the bank, the credit/debit card network 102 including the I/O ports 106 and the credit/debit card network processor 104, the merchants 108, 110, 112, and the acquirer/processor 130. In addition, Figure 6 illustrates the customer to indicate that the customer provides enrollment, issuance, and points information to the administrator. In addition, the participant with debit card 114 is illustrated to show that the participant initiates travel/merchandise orders and receives a periodic account statement from the information that is in the filter processor.

It is also contemplated that the debit card system 100 according to the invention may have several optional features. For example, the administrator may have a commission account and via an automated clearing house may debit a transaction commission amount for each validated debit transaction to the commission account of the program

administrator while crediting the transaction commission amount to an account of the initiating merchant. More particularly, the credit/debit card network processor 104 may deduct the commission amount credited to the initiating merchant from the merchant's proceeds from the validated debit transaction.

Optionally, the debit cards may be embossed with information identifying the customer so that whenever a participant uses a debit card the participant is reminded that such card provides rewards which have been supplied by the customer.

It is also contemplated that many types of optional reports, some of which have been noted above and in Figure 6, may also be generated by the debit card system 100. For example, the filter processor 116 may generate redemption reports for each merchant indicating debit card transactions by participants. In this case, the filter processor 116 generates a rewards account report for each participant indicating debit transactions by such participant and indicating the amount of points in such participant's award account.

In order to minimize the number of participant account numbers which are part of the program data provided by the host processor 122, it is contemplated that the filter processor 116 may delete from the program data authorized unique account numbers which have not initiated a debit transaction for a predetermined period of time, e.g., six months.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above products and methods without departing from the scope of the invention, it is intended that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

WHAT IS CLAIMED IS:

1. In a system for implementing a program having participants, said program permitting the participants to obtain products and/or services from authorized merchants who are part of the program and who are part of a credit/debit card network, which credit/debit card network also includes unauthorized merchants who are not part of the program and who are part of the credit/debit card network, each merchant having access via an input/output (I/O) port to a credit/debit card network, said system including a plurality of debit and/or credit cards, each having a unique account number corresponding to an account of the participant; the improvement comprising:

a. a filter interfacing with the credit/debit card network and accessing the following program data:

1. data identifying the authorized unique account numbers of the participants, and

2. data identifying the authorized merchants;

b. said filter including means, responsive to an initiating transaction based on an initiating account number, for transmitting from the credit/debit card network to the filter the following transaction data:

1. the account number of the card initiating the transaction,

2. merchant identification data of the merchant involved in the initiating transaction, and

3. data regarding the amount of the initiated transaction;

c. said filter including means for evaluating the transaction data transmitted to the filter by the

credit/debit card network by comparing the transaction data to the program data;

d. said filter including means for generating validating data for the transaction when the evaluated transaction data indicates that the transaction involves an authorized merchant using the unique account number of one of the participants;

e. said filter evaluating means including means for generating invalidating data for the transaction when the evaluated transaction data indicates that the initiating account number is not one of the authorized account numbers;

f. said filter evaluating means including means for generating invalidating data for the transaction when the evaluated transaction data indicates that the merchant involved in the transaction is not one of the authorized merchants; and

g. said filter including means for transmitting the validating or invalidating data to the credit/debit card network so that the credit/debit card network provides the validating or invalidating data for the evaluated transaction to the merchant involved in the transaction.

2. The filter of claim 1 wherein the amount of the initiated transaction is in a currency denomination such as dollars, wherein each account has a point value, wherein the evaluating means converts the point value of the account corresponding to the initiating account number into the currency denomination of the amount of the initiating transaction, and wherein the evaluating means generates the validating data if the converted point value equals or exceeds the amount of the initiating transaction.

3. The filter of claim 2 wherein said filter processor evaluating means comprises a banking processor.

4. The filter of claim 1 wherein the filter processor is maintained by a program administrator having a commission account and wherein the program administrator via an automated clearing house credits or deposits a transaction commission amount for each validated transaction to the commission account of the program administrator and debits or removes the transaction commission amount to an account of the merchant involved in the transaction.

5. The filter of claim 4 wherein the credit/debit card network processor deducts the commission amount credited to the merchant involved in the transaction from the merchant's proceeds from the validated transaction.

6. The filter of claim 1 wherein the cards include embossing relating to the program.

7. The filter of claim 1 wherein the cards are debit cards having a magnetic strip encoded with a number corresponding to the unique account number of the participant whereby the transaction is transparent to the merchants involved in the transactions such that the involved merchant cannot distinguish between transactions using debit cards and transactions using credit cards.

8. The filter of claim 7 wherein at least some merchants have a card reader adapted to be connected to the I/O port and wherein the initiating transaction is initiated by reading the magnetic strip of the card.

9. The filter of claim 1 wherein the filter processor generates redemption reports for each merchant indicating card transactions by participants and wherein the filter processor generates account reports for each participant in the program indicating transactions by such participant and indicating the amount of points in such participant's account.

10. The filter of claim 1 wherein the filter processor deletes from the program data authorized unique account numbers which have not initiated a transaction for a predetermined period of time.

11. The filter of claim 1 wherein the credit/debit card network processor comprises a merchant processor linked to a switch processor and wherein the filter processor comprises a banking processor linked to an administrator's processor.

12. The filter of claim 1 wherein the filter processor is maintained by a program administrator having a balance account and wherein, during a force post portion of the transaction, the filter processor debits a transaction amount for each validated transaction to the balance account of the program administrator and credits the transaction amount to an account of the merchant involved in the transaction.

13. The filter of claim 1 wherein the system includes only debit cards.

14. A filtering method for implementing a program having participants, said program permitting the participants to obtain products and/or services from authorized merchants

who are part of the program and who are part of a credit/debit card network, which credit/debit card network also includes unauthorized merchants who are not part of the program and who are part of the credit/debit card network, each merchant having access via an input/output (I/O) port to a credit/debit card network, said filtering method comprising the steps of:

a. providing a plurality of cards, each assigned to one participant and having a unique account number corresponding to an account of the participant;

b. accessing the following program data:

(1) data identifying the authorized unique account numbers of the participants, and

(2) data identifying the authorized merchants;

c. transmitting the following transaction data in response to an initiating transaction based on an initiating account number:

(1) the initiating account number of the card initiating the transaction,

(2) merchant identification data of the merchant involved in the transaction, and

(3) data regarding the amount of the initiated transaction;

d. comparing the transmitted transaction data to the program data;

e. validating the transaction when the comparing step indicates that the transaction involves an authorized merchant using the unique account number of a participant;

f. invalidating the transaction when the comparing step indicates that the initiating account number is not one of the authorized account numbers; and

g. invalidating the transaction when the comparing step indicates that the merchant involved in the transaction is not one of the authorized merchants.

15. The filtering method of claim 14 wherein the steps of initiating, evaluating, validating and invalidating are performed electronically whereby the transaction is paperless.

16. The filtering method of claim 14 wherein the cards are only debit cards.

17. A system for implementing a program having participants, said program permitting the participants to obtain products and/or services from authorized merchants who are part of the program, said system for use with:

a credit/debit card network which includes the authorized merchants who are part of the credit/debit card network and which also includes unauthorized merchants who are not part of the program and who are part of the credit/debit card network, each merchant having access via an input/output (I/O) port to a credit/debit card network; and

a plurality of cards, each assigned to one participant and having a unique account number corresponding to an account of the participant;

said system comprising:

a. a filter accessing the following program data:

(1) data identifying the authorized unique account numbers of the participants, and

(2)data identifying the authorized merchants; said filter interfacing with the credit/debit card network;

b. said filter responsive to an initiating transaction based on an initiating account number for transmitting from the credit/debit card network to the filter the following transaction data:

(1) the initiating account number of the card initiating the transaction,

(2) merchant identification data of the merchant involved in the transaction, and

(3) data regarding the amount of the initiated transaction;

c. said filter evaluating the transaction data transmitted to the filter by the credit/debit card network by comparing the transaction data to the program data;

d. said filter generating validating data for the transaction when the evaluated transaction data indicates that the transaction involves an authorized merchant using the unique account number of one of the participants;

e. said filter generating invalidating data for the transaction when the evaluated transaction data indicates that the initiating account number is not one of the authorized account numbers;

f. said filter generating invalidating data for the transaction when the evaluated transaction data indicates that the merchant involved in the transaction is not one of the authorized merchants; and

g. said filter transmitting the validating or invalidating data to the credit/debit card network so that the credit/debit card network provides the validating or invalidating data for the evaluated transaction to the merchant involved in the transaction.

18. The filter of claim 17 wherein the cards are only debit cards.

19. A filter for implementing a program having participants, said program permitting the participants to obtain products and/or services from authorized merchants who are part of the program and who are part of a credit/debit card network, which credit/debit card network also includes unauthorized merchants who are not part of the program and who are part of the credit/debit card network, each merchant having access via an input/output (I/O) port to a credit/debit card network, said filter for use with a plurality of cards, each of the cards having a unique account number corresponding to an account; said filter comprising:

a filter accessing the following program data:

(1) data identifying the authorized unique account number of each card, and

(2) data identifying the authorized merchants;

said filter interfacing with the credit/debit card network;

said filter including means, responsive to an initiating transaction based on an initiating account number, for transmitting from the credit/debit card network to the filter the following transaction data:

(1) the initiating account number of the card initiating the transaction,

(2) merchant identification data of the merchant involved in the transaction, and

(3) data regarding the amount of the initiated transaction;

said filter including means for evaluating the transaction data transmitted to the filter by the credit/debit card network by comparing the transaction data to the program data;

said filter evaluating means including means for generating validating data for the transaction when the evaluated transaction data indicates that the transaction involves an authorized merchant using the unique account number of one of the cards;

said filter evaluating means including means for generating invalidating data for the transaction when the evaluated transaction data indicates that the initiating account number is not one of the authorized account numbers;

said filter evaluating means including means for generating invalidating data for the transaction when the evaluated transaction data indicates that the merchant involved in the transaction is not one of the authorized merchants; and

said filter including means for transmitting the validating or invalidating data to the credit/debit card network so that the credit card network provides the validating or invalidating data for the evaluated transaction to the merchant involved in the transaction.

20. The filter of claim 19 wherein the cards are only debit cards.

21. A filter for implementing a program having participants, said program permitting the participants to obtain products and/or services from authorized merchants who are part of the program and who are part of a credit/debit card network, which credit/debit card network also includes unauthorized merchants who are not part of the program and who are part of the credit/debit card network, each merchant having access via an input/output (I/O) port to a credit/debit card network, said filter for use with a plurality of cards, each of the cards having a unique account number corresponding to an account; said filter comprising:

a. a filter accessing the following program data:

(1) data identifying the authorized unique account number of each card, and

(2) data identifying the authorized merchants;

said filter interfacing with the credit/debit card network;

b. said filter responsive to an initiating transaction based on an initiating account number and transmitting from the credit/debit card network to the filter the following transaction data:

(1) the initiating account number of the card initiating the transaction,

(2) merchant identification data of the merchant involved in the transaction, and

(3) data regarding the amount of the initiated transaction;

c. said filter evaluating the transaction data transmitted to the filter by the credit/debit card network by comparing the transaction data to the program data;

d. said filter generating validating data for the transaction when the evaluated transaction data indicates that the transaction involves an authorized merchant using the unique account number of one of the cards;

e. said filter generating invalidating data for the transaction when the evaluated transaction data indicates that the initiating account number is not one of the authorized account numbers;

f. said filter generating invalidating data for the transaction when the evaluated transaction data indicates that the merchant involved in the transaction is not one of the authorized merchants; and

g. said filter transmitting the validating or invalidating data to the credit/debit card network so that the credit card network provides the validating or invalidating data for the evaluated transaction to the merchant involved in the transaction.

22. A filtering method for implementing a program having participants, said program permitting the participants to obtain products and/or services from authorized merchants who are part of the program and who are part of a credit/debit card network, which credit/debit card network also includes unauthorized merchants who are not part of the program and who are part of the credit/debit card network,

each merchant having access via an input/output (I/O) port to a credit/debit card network, said filtering method comprising the steps of:

a. providing a plurality of cards, each assigned to one participant and having a unique account number corresponding to an account of the participant;

b. accessing the following program data:

(1) data identifying the authorized unique account numbers of the participants, and

(2) data identifying the authorized merchants;

c. transmitting the following transaction data in response to a transaction based on an initiating account number:

(1) the initiating account number of the card initiating the transaction,

(2) merchant identification data of the merchant involved in the transaction, and

(3) data regarding the amount of the initiated transaction;

d. comparing the transmitted transaction data to the program data;

e. validating the transaction when the comparing step indicates that the transaction involves an authorized merchant using the unique account number of a participant;

f. invalidating the transaction when the comparing step indicates that the initiating account number is not one of the authorized account numbers; and

g. invalidating the transaction when the comparing step indicates that the merchant involved in the transaction is not one of the authorized merchants.

23. A system for implementing a program for a customer having participants, said program permitting the participants to obtain products and/or services from authorized merchants who are part of the program and who are part of a credit/debit card network, which credit/debit card network also includes unauthorized merchants who are not part of the program and who are part of the credit/debit card network, each merchant having access via an input/output (I/O) port to a credit/debit card network, said system comprising:

a. a plurality of cards, each assigned to one participant and having a unique account number corresponding to an account of the participant;

b. a filter accessing the following program data:

(1) data identifying the authorized unique account numbers of the participants, and

(2) data identifying the authorized merchants;

said filter interfacing with the credit/debit card network;

c. means, responsive to an initiating transaction based on an initiating account number, for transmitting from the credit/debit card network to the filter the following transaction data:

(1) the initiating account number of the card initiating the transaction,

(2) merchant identification data of the merchant involved in the transaction, and

(3) data regarding the amount of the initiated transaction;

d. said filter including means for evaluating the transaction data transmitted to the filter by the credit/debit card network by comparing the transaction data to the program data;

e. said filter evaluating means including means for generating validating data for the transaction when the evaluated transaction data indicates that the transaction involves an authorized merchant using the unique account number of one of the participants;

f. said filter evaluating means including means for generating invalidating data for the transaction when the evaluated transaction data indicates that the initiating account number is not one of the authorized account numbers;

g. said filter evaluating means including means for generating invalidating data for the transaction when the evaluated transaction data indicates that the merchant involved in the transaction is not one of the authorized merchants; and

h. said filter including means for transmitting the validating or invalidating data to the credit/debit card network so that the credit/debit card network provides the validating or invalidating data for the evaluated transaction to the merchant involved in the transaction.

24. The system of claim 23 wherein the cards consist of debit cards only.

25. The system of claim 23 wherein the program comprises an incentive award program.

26. A method for implementing a program for a customer having participants, said program permitting the participants

to obtain products and/or services from authorized merchants who are part of the program and who are part of a credit/debit card network, which credit/debit card network also includes unauthorized merchants who are not part of the program and who are part of the credit/debit card network, each merchant having access via an input/output (I/O) port to a credit/debit card network, said method comprising the steps of:

a. providing a plurality of cards, each assigned to one participant and having a unique account number corresponding to an account of the participant;

b. accessing the following program data:

(1) data identifying the authorized unique account numbers of the participants, and

(2) data identifying the authorized merchants;

c. transmitting the following transaction data in response to an initiating transaction based on an initiating account number:

(1) the initiating account number of the card initiating the transaction,

(2) merchant identification data of the merchant involved in the transaction, and

(3) data regarding the amount of the initiated transaction;

d. comparing the transmitted transaction data to the program data;

e. validating the transaction when the comparing step indicates that the transaction involves an authorized merchant using the unique account number of a participant;

f. invalidating the transaction when the comparing step indicates that the initiating account number is not one of the authorized account numbers; and

g. invalidating the transaction when the comparing step indicates that the merchant involved in the transaction is not one of the authorized merchants.

27. The method of claim 26 wherein the cards consist of debit cards only.

28. The method of claim 26 wherein the program comprises an incentive award program.

DEBIT CARD SYSTEM AND METHOD FOR IMPLEMENTING INCENTIVE AWARD PROGRAM

Abstract of the Invention

A debit card system for implementing an incentive award program for a customer having participants. A plurality of debit cards, each assigned to one participant and having a unique account number corresponding to an award account of the participant is part of the system. A bank filter processor accesses program data including data identifying the authorized unique account numbers of the participants, data identifying the authorized merchants and data indicating the balance in each participant's award account. The filter processor compares this program data to the following transaction data: the initiating account number of the card initiating the transaction, the merchant identification data of the initiating merchant, and the data regarding the amount of the initiated transaction. The filter processor generates validating data for the transaction when the evaluated transaction data indicates that the transaction has been initiated by an authorized merchant using the unique account number of one of the participants having a sufficient balance in the participant's corresponding award account to cover the transaction. Otherwise, invalidating data is generated.

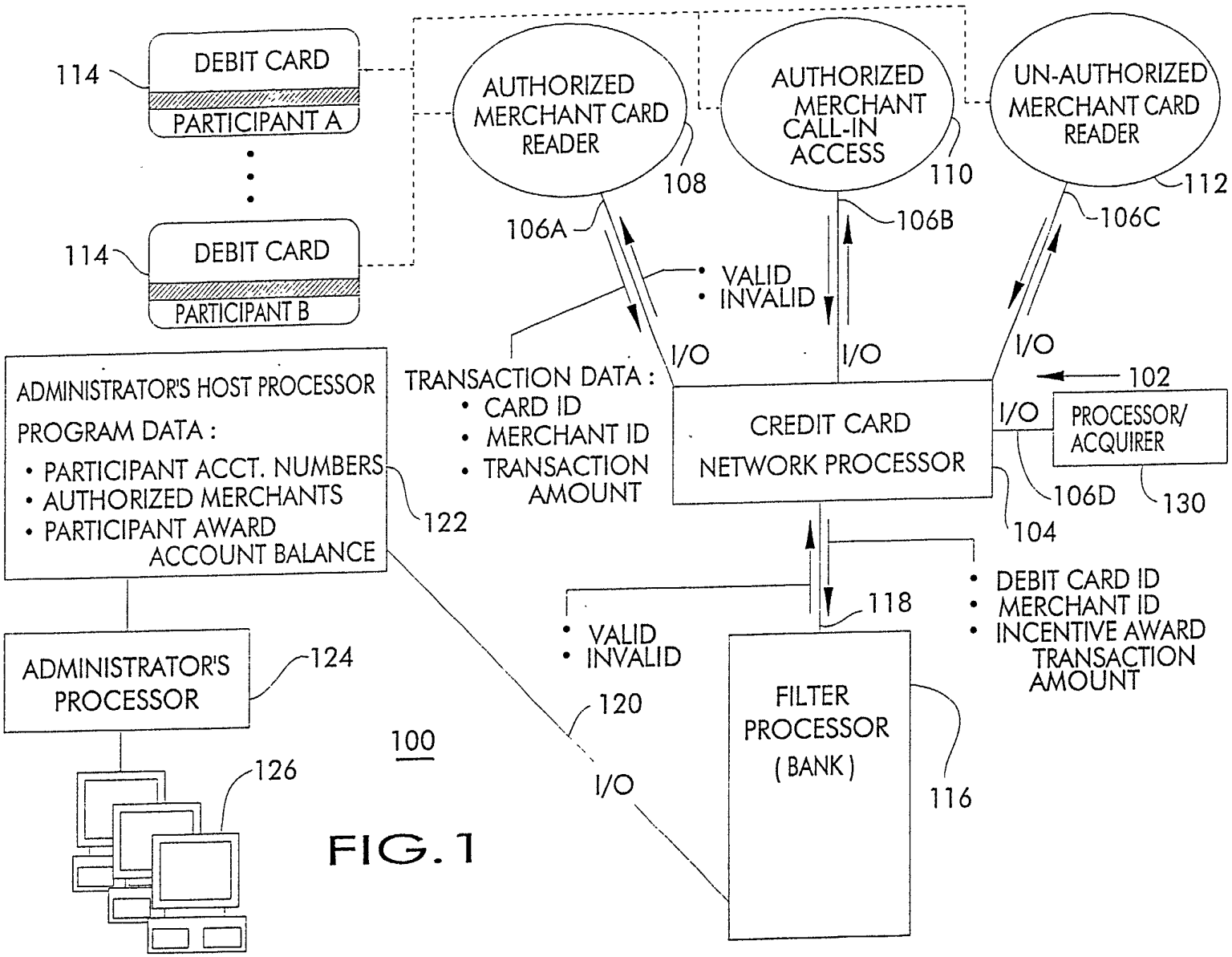

114
DEBIT CARD
PARTICIPANT A
114
DEBIT CARD
PARTICIPANT B
AUTHORIZED MERCHANT CARD READER
108
AUTHORIZED MERCHANT CALL-IN ACCESS
110
UN-AUTHORIZED MERCHANT CARD READER
112
106A
106B
106C
• VALID
• INVALID
I/O
I/O
I/O
102
ADMINISTRATOR'S HOST PROCESSOR
PROGRAM DATA :
• PARTICIPANT ACCT. NUMBERS
• AUTHORIZED MERCHANTS
• PARTICIPANT AWARD ACCOUNT BALANCE
122
TRANSACTION DATA :
• CARD ID
• MERCHANT ID
• TRANSACTION AMOUNT
CREDIT CARD NETWORK PROCESSOR
I/O
PROCESSOR/ ACQUIRER
106D
130
104
• DEBIT CARD ID
• MERCHANT ID
• INCENTIVE AWARD TRANSACTION AMOUNT
118
• VALID
• INVALID
ADMINISTRATOR'S PROCESSOR
124
120
100
FILTER PROCESSOR (BANK)
116
126
I/O

FIG. 1

FIG.2

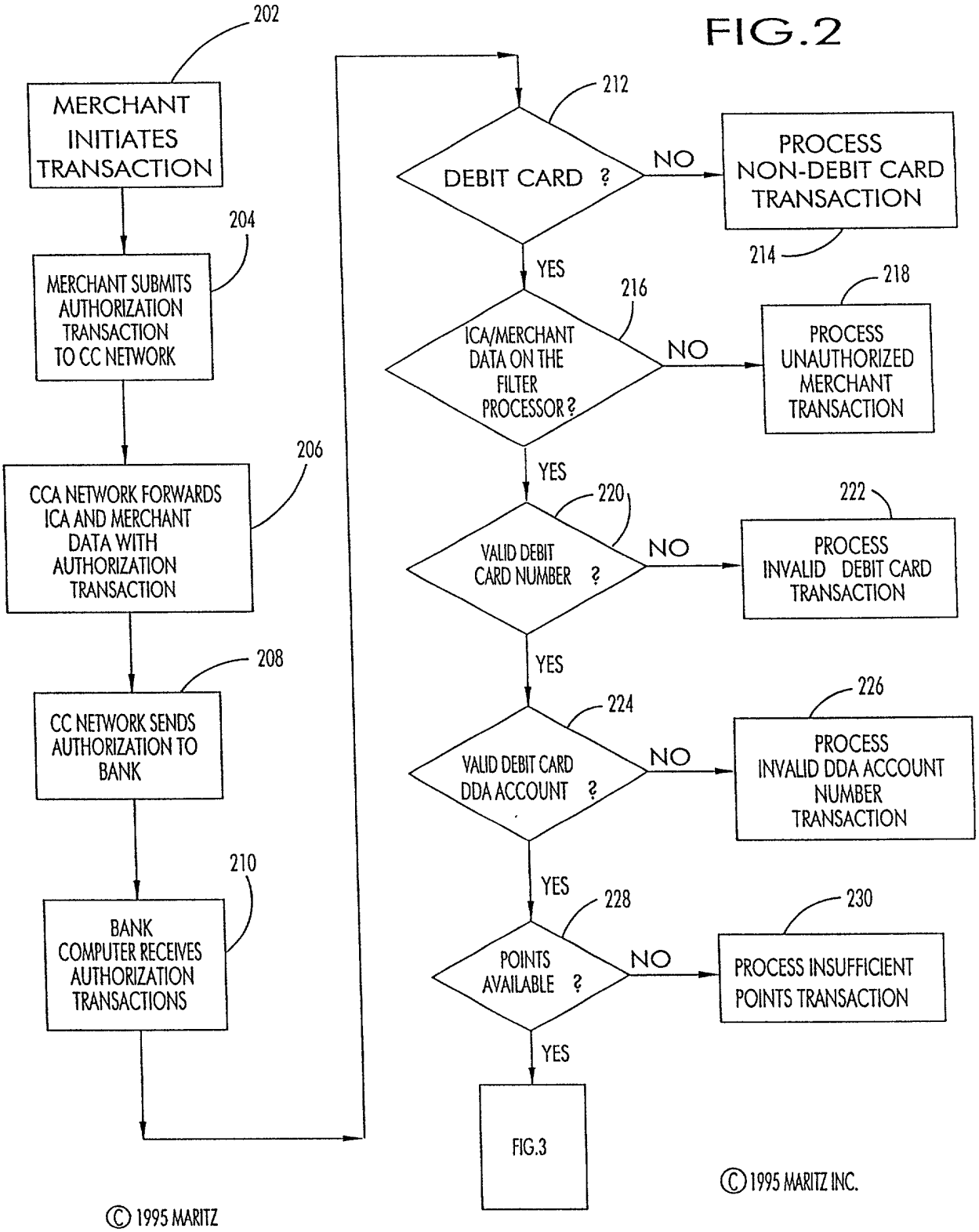


FIG.3

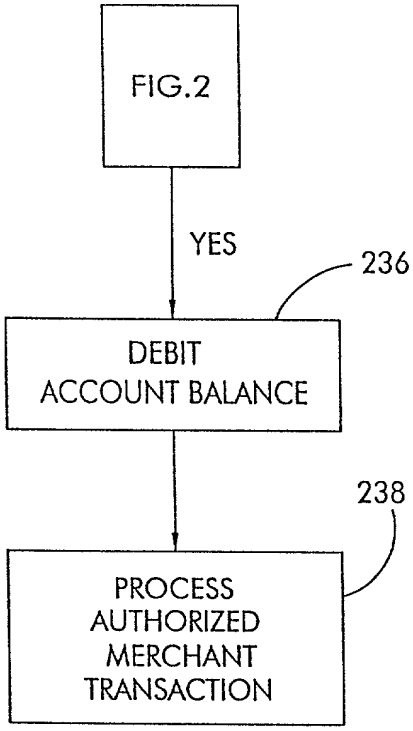


FIG.4B

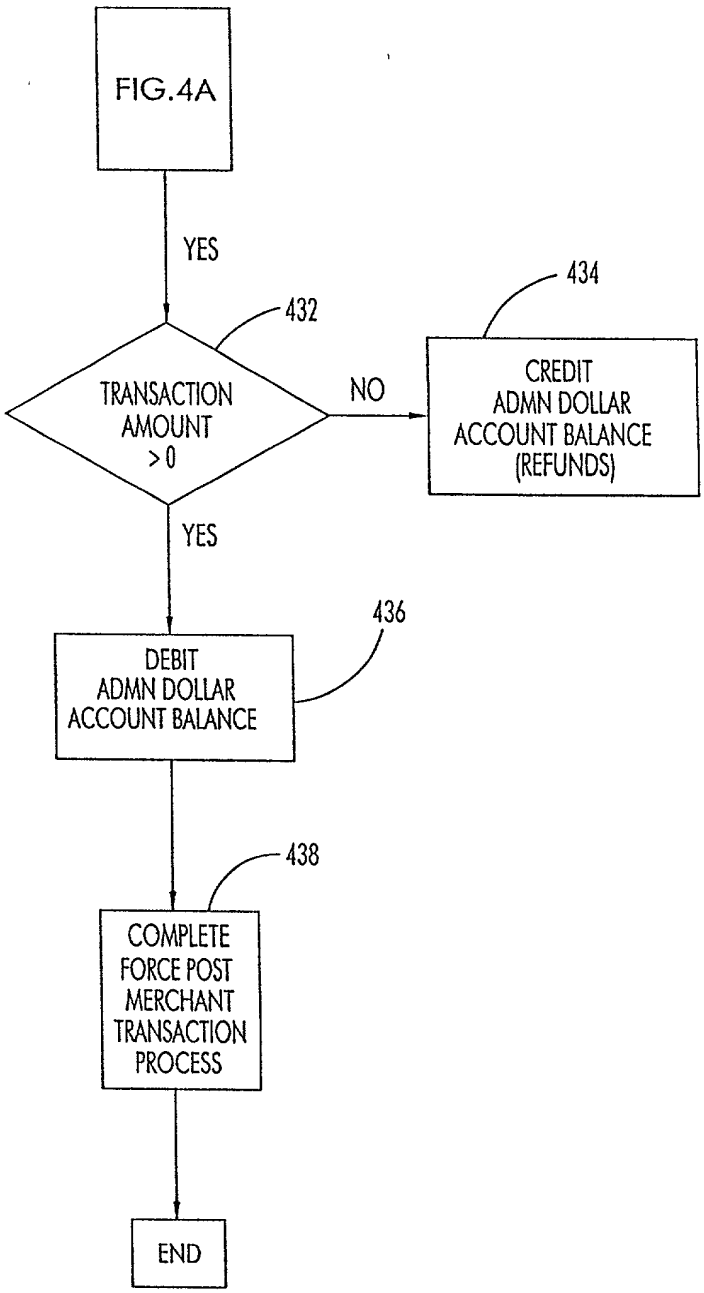
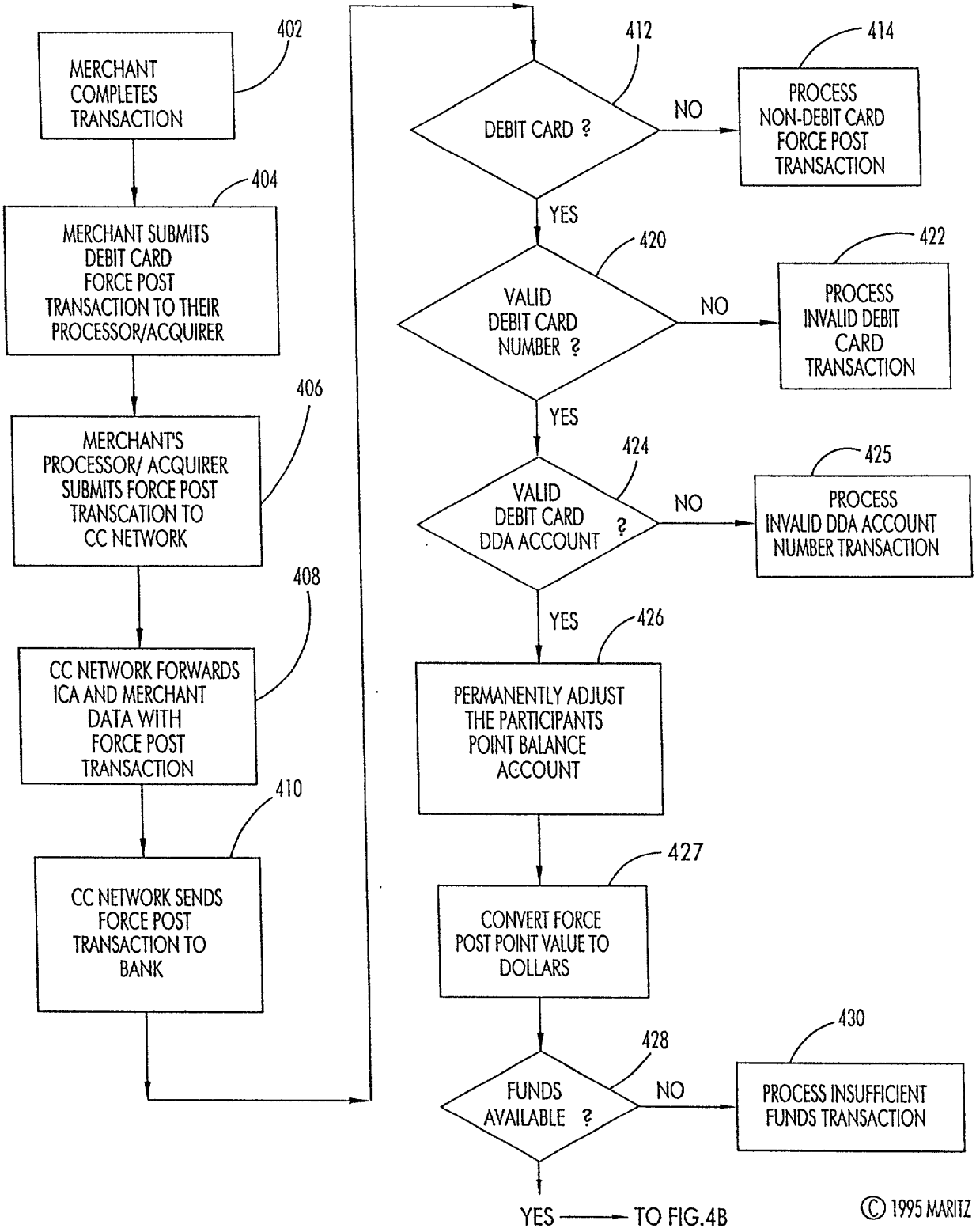


FIG.4A


402
MERCHANT COMPLETES TRANSACTION
404
MERCHANT SUBMITS DEBIT CARD FORCE POST TRANSACTION TO THEIR PROCESSOR/ACQUIRER
406
MERCHANT'S PROCESSOR/ ACQUIRER SUBMITS FORCE POST TRANSCATION TO CC NETWORK
408
CC NETWORK FORWARDS ICA AND MERCHANT DATA WITH FORCE POST TRANSACTION
410
CC NETWORK SENDS FORCE POST TRANSACTION TO BANK
412
DEBIT CARD ?
NO
414
PROCESS NON-DEBIT CARD FORCE POST TRANSACTION
YES
420
VALID DEBIT CARD NUMBER ?
NO
422
PROCESS INVALID DEBIT CARD TRANSACTION
YES
424
VALID DEBIT CARD DDA ACCOUNT ?
NO
425
PROCESS INVALID DDA ACCOUNT NUMBER TRANSACTION
YES
426
PERMANENTLY ADJUST THE PARTICIPANTS POINT BALANCE ACCOUNT
427
CONVERT FORCE POST POINT VALUE TO DOLLARS
428
FUNDS AVAILABLE ?
NO
430
PROCESS INSUFFICIENT FUNDS TRANSACTION
YES
TO FIG.4B
© 1995 MARITZ

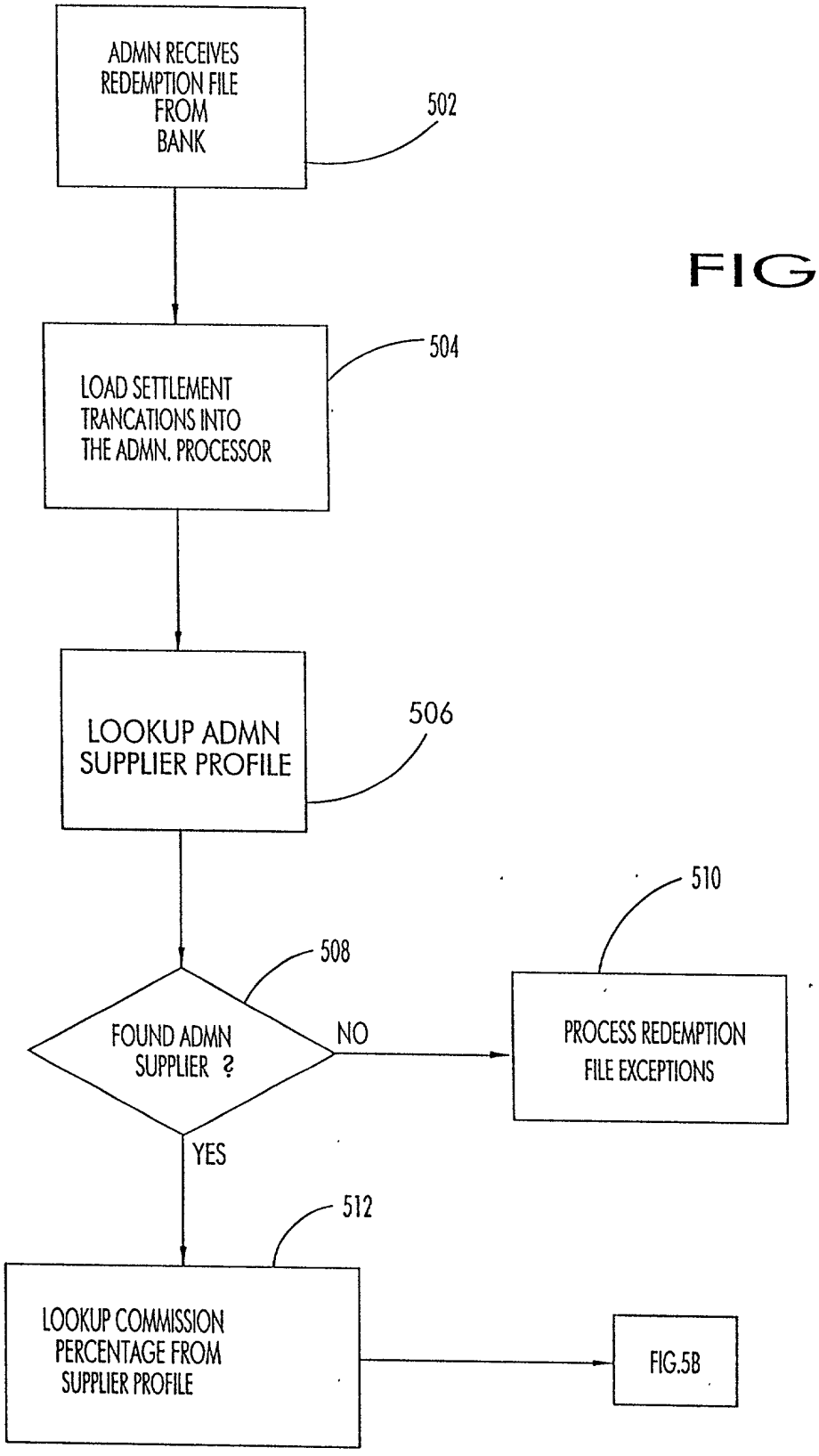


FIG.5A

FIG.5B

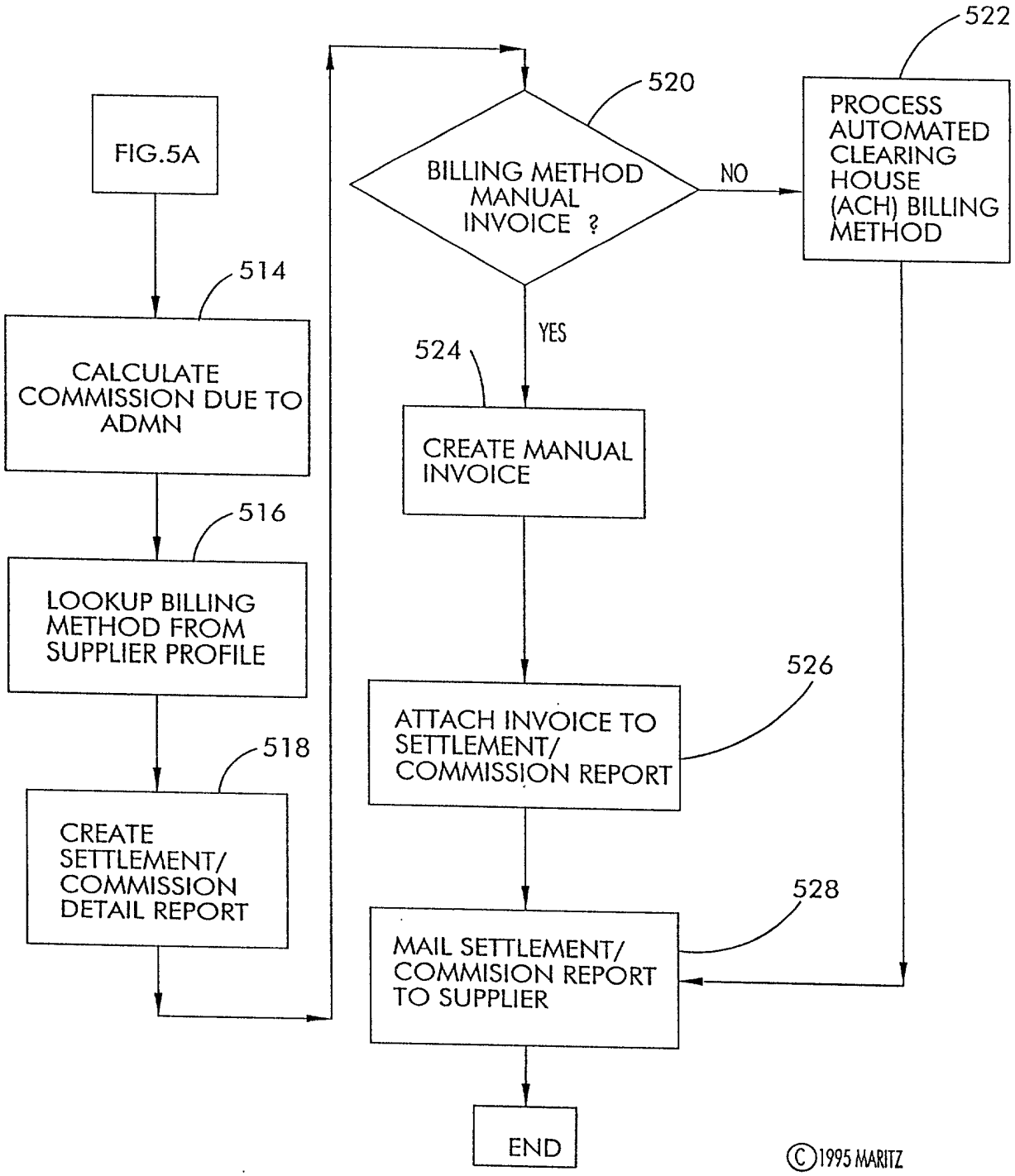


FIG.5A
514
CALCULATE COMMISSION DUE TO ADMN
516
LOOKUP BILLING METHOD FROM SUPPLIER PROFILE
518
CREATE SETTLEMENT/ COMMISSION DETAIL REPORT
520
BILLING METHOD MANUAL INVOICE ?
NO
YES
522
PROCESS AUTOMATED CLEARING HOUSE (ACH) BILLING METHOD
524
CREATE MANUAL INVOICE
526
ATTACH INVOICE TO SETTLEMENT/ COMMISSION REPORT
528
MAIL SETTLEMENT/ COMMISION REPORT TO SUPPLIER
END
©1995 MARITZ

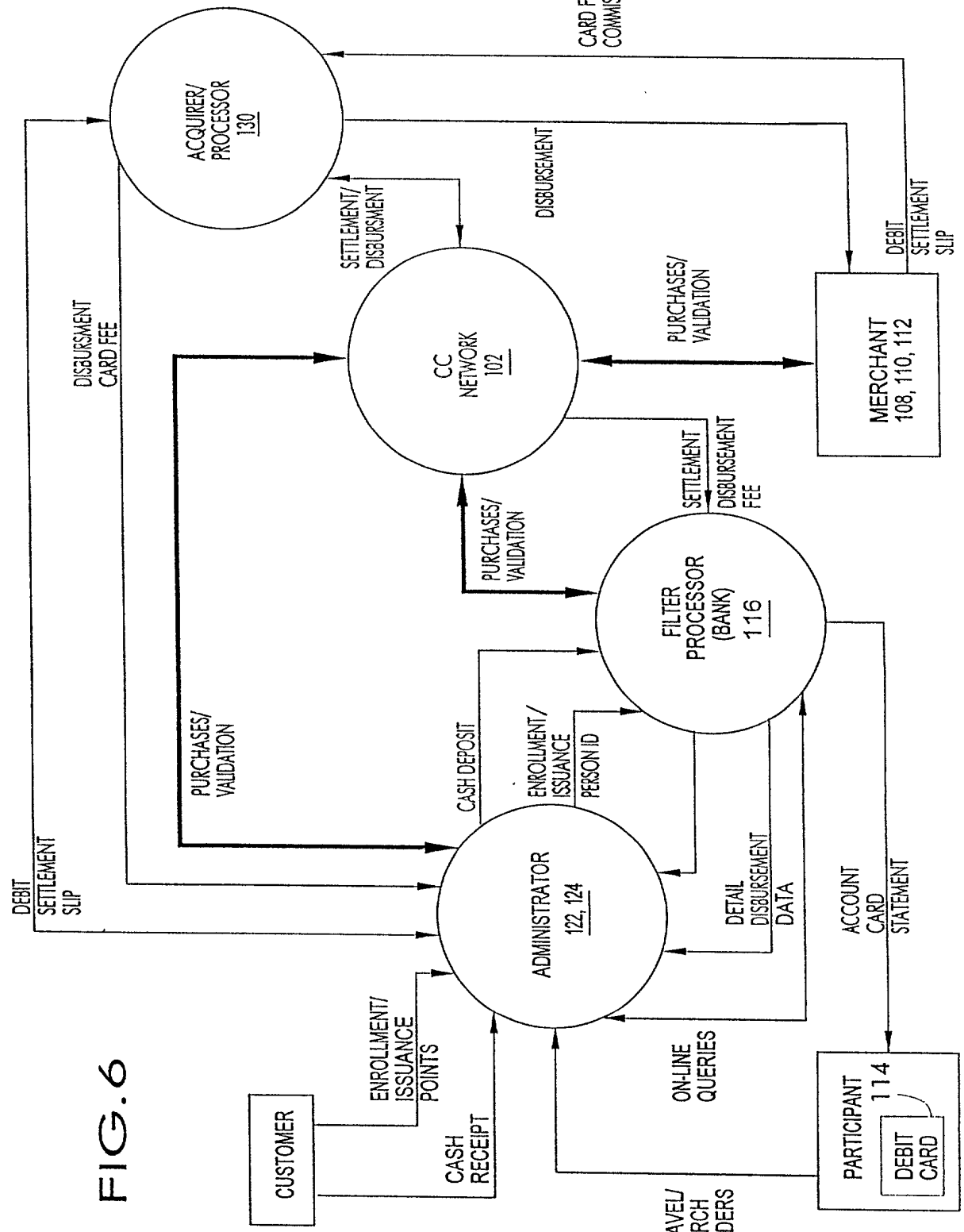

ACQUIRER/
PROCESSOR
130
CARD FEE
COMMISION
DISBURSEMENT
SETTLEMENT/
DISBURSMENT
DISBURSMENT
CARD FEE
CC
NETWORK
102
PURCHASES/
VALIDATION
DEBIT
SETTLEMENT
SLIP
MERCHANT
108, 110, 112
SETTLEMENT
DISBURSEMENT
FEE
PURCHASES/
VALIDATION
FILTER
PROCESSOR
(BANK)
116
PURCHASES/
VALIDATION
CASH DEPOSIT
ENROLLMENT/
ISSUANCE
PERSON ID
DEBIT
SETTLEMENT
SLIP
ADMINISTRATOR
122, 124
DETAIL
DISBURSEMENT
DATA
ACCOUNT
CARD
STATEMENT
ENROLLMENT/
ISSUANCE
POINTS
ON-LINE
QUERIES
CUSTOMER
CASH
RECEIPT
TRAVEL/
MERCH
ORDERS
PARTICIPANT
114
DEBIT
CARD

FIG. 6

Attorney's Docket No. MRZ 8760

DECLARATION AND POWER OF ATTORNEY

REGULAR OR DESIGN APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

DEBIT CARD SYSTEM AND METHOD FOR IMPLEMENTING INCENTIVE AWARD PROGRAM

the specification of which:

(check one)

[ ] is attached hereto
[x] was filed on March 21, 1996 as Application Serial No. 08/620,041, and was amended on _____.
[ ] was described and claimed in PCT International Application No. _____, filed on _____ and as amended under PCT Article 19 on _____, if any.

ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations §1.56.

PRIORITY CLAIM

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

EARLIEST FOREIGN APPLICATION(S), IF ANY FILED WITHIN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO SAID APPLICATION

Priority Claimed

(Number)	(Country)	(Day/Month/Year Filed)	[ ] Yes	[ ] No
(Number)	(Country)	(Day/Month/Year Filed)	[ ] Yes	[ ] No
(Number)	(Country)	(Day/Month/Year Filed)	[ ] Yes	[ ] No

ALL FOREIGN APPLICATION(S), IF ANY FILED MORE THAN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO SAID APPLICATION

(Number)	(Country)	(Day/Month/Year Filed)

CLAIM FOR BENEFIT OF PROVISIONAL APPLICATION(S)

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional application(s) listed below.

(Application Number)	(Filing Date)
(Application Number)	(Filing Date)

CLAIM FOR BENEFIT OF EARLIER U.S. APPLICATION(S) UNDER 35 U.S.C. 120

(complete this part only if this is a divisional, continuation or CIP application)

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

08/408,690 (Serial No.)	3/21/95 (Filing Date)	pending (Status: patented, pending, abandoned)
(Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

POWER OF ATTORNEY

I hereby appoint the following attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Stuart N. Senniger (16,184), Irving Powers (15,700), Donald G. Leavitt (17,626), John K. Roedel, Jr. (25,914), Michael E. Godar (28,416), Edward J. Hejlek (31,525), William E. Lahey (26,757), Richard G. Heywood (18,224), Frank R. Agovino (27,416), Kurt F. James (33,716), G. Harley Blosser (33,650), Paul I. J. Fleischut (35,513), Vincent M. Keil (36,838), Robert M. Evans, Jr. (36,794), Robert M. Bain (36,736), Kathleen M. Petrillo (35,076), Rudolph A. Telscher, Jr. (36,032), Paul A. Stone (38,628), Cindy S. Kaplan (40,043), David E. Crawford, Jr. (38,118), and Paul A. Maddock (37,877).

Send Correspondence To:	Direct Telephone Calls To:
SENNIGER, POWERS, LEAVITT & ROEDEL One Metropolitan Square, 16th Floor St. Louis, Missouri 63102	Frank R. Agovino (314) 231-5400

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

- -

Full name of sole or first inventor David C. Carrithers

Inventor's signature David C. Carrithers Date 5-16-96
Residence St. Louis County, Missouri Citizenship U.S.A.
Post Office address 1375 North Highway Drive
Fenton, Missouri 63099

Full name of second joint inventor Steven G. Rapp

Second inventor's signature Steven G. Rapp Date 5-13-96
Residence St. Louis County, Missouri Citizenship U.S.A.
Post Office address 1375 North Highway Drive
Fenton, Missouri 63099

Full name of third joint inventor Gayla L. Stone

Third inventor's signature _____ Date 5/14/96
Residence St. Louis County, Missouri Citizenship U.S.A.
Post Office address 1375 North Highway Drive
Fenton, Missouri 63099

Full name of fourth joint inventor Jody A. Storey-Waller

Fourth inventor's signature _____ Date 5/14/96
Residence St. Louis County, Missouri Citizenship U.S.A.
Post Office address 1375 North Highway Drive
Fenton, Missouri 63099

Full name of fifth joint inventor Kim A. Resch

Fifth inventor's signature _____ Date 5/13/96
Residence St. Louis County, Missouri Citizenship U.S.A.
Post Office address 1375 North Highway Drive
Fenton, Missouri 63099

Full name of sixth joint inventor Kelly K. McGuire

Sixth inventor's signature _____ Date 5/13/96
Residence St. Louis County, Missouri Citizenship U.S.A.
Post Office address 1375 North Highway Drive
Fenton, Missouri 63099

Full name of seventh joint inventor Toni L. Ashby

Seventh inventor's signatue _____ Date 5/13/96
Residence St. Louis County, Missouri Citizenship U.S.A.
Post Office address 1375 North Highway Drive
Fenton, Missouri 63099

Full name of eighth joint inventor Mark Jackson

Eighth inventor's signatue _____ Date _____
Residence St. Louis County, Missouri Citizenship U.S.A.
Post Office address 800 Market Street
St. Louis, Missouri 63166

Full name of ninth joint inventor Lowell Huff

Ninth inventor's signatue _____ Date _____
Residence 10 Windsor, Manchester, MO 63011 Citizenship U.S.A.
Post Office address St. Louis County, Missouri
St. Louis, Missouri 63166